Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of Parts 1, 21, 73, 74 and 101 of the Commission's Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands	)	WT Docket No. 03-66 RM-10586
	)	
Part I of the Commission's Rules - Further Competitive Bidding Procedures	)	WT Docket No. 03-67
	)	
Amendment of Parts 21 and 74 to Enable Multipoint Distribution Service and the Instructional Television Fixed Service Amendment of Parts 21 and 74 to Engage in Fixed Two-way Transmissions	)	MM Docket No. 97-217
	)	
Amendment of Parts 21 and 74 of the Commission's Rules With Regard to Licensing in the Multipoint Distribution Service and in the Instructional Television Fixed Service for the Gulf of Mexico	)	WT Docket No. 02-68 RM-9718

NOTICE OF PROPOSED RULE MAKING AND MEMORANDUM OPINION AND ORDER

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By the Commission: Chairman Powell, Commissioners Abernathy and Copps issuing separate statements

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I. INTRODUCTION AND EXECUTIVE SUMMARY

1. By this ***Notice* of *Proposed Rulemaking and Memorandum Opinion and Order (NPRM & MO&O)***, we initiate a comprehensive examination of our rules and policies governing the licensing of the Instructional Television Fixed Service (ITFS), the Multipoint Distribution Service (MDS), and the Multichannel Multipoint Distribution Service (MMDS) (collectively, the Services) in the 2500-2690 MHz band.[1] By this action, the **Commission** seeks to promote competition, innovation and investment in wireless broadband services, and to promote educational services. Additionally, the Commission also seeks to foster the development of innovative service offerings to consumers as well as educational, medical and other institutions, simplify the licensing process and delete obsolete and unnecessary regulatory burdens. We believe that it is appropriate and prudent to take this action at this time because the Services and the potential uses for the spectrum allotted to them have evolved significantly since the inception of the Services. Those **uses** present a significant opportunity to provide alternatives for the provision of broadband services to consumers in urban, suburban and rural areas and to improve opportunities for distance learning and telemedicine services. In addition, this proceeding has been prompted, in part, by the request of a group of representatives of licensees in the Services — namely, the Wireless Communications Association International (WCA), the National ITFS Association (NIA) and the Catholic Television Network (CTN) (collectively, the Coalition) — that we substantially change the

[1] The terms MDS and MMDS are **often** used interchangeably. The Commission coined the term "MDS" at a time when it was making only two channels available for the service, at 2150-2162 MHz. We began using the term "MMDS" when formulating rules making additional channels for the service available in the 2500-2690 MHz hand. For the purposes of this ***NPRM,*** we will use the term "MDS" to signify both services. For the reasons discussed **in** paras. 152-153, below, we do not propose new rules affecting MDS channels in the 2150-2162 MHz hand in this notice, but we intend to address requirements affecting the licensees that are presently assigned to those channels in a further notice of proposed rulemaking in this proceeding.

rules governing the Services? Our proposals are intended to foster the provision of innovative and traditional service offerings to consumers as well as educational, medical and other institutions, to simplify the licensing process, and to delete obsolete rules and unnecessary regulatory burdens.

2. The rule changes proposed in this, ***NPRM*** would facilitate the provision of high-speed data and voice services accessible to mobile as well as fixed users on channels that today are used primarily for one-way video operations to fixed locations.' These changes would ultimately affect between 142 and 190 MHz of spectrum, depending upon which of the alternative sets of rules proposed in this Notice are adopted. We emphasize, however, that we do not intend to evict any incumbent licensees from the affected band if they have been in compliance with our rules and continue to comply with our rules when we modify or augment them nor do we intend to undermine the educational mission of ITFS licensees. Far from evicting existing licensees, we anticipate that the streamlined regulations and revised spectrum plan adopted in this proceeding will facilitate the provision of advanced wireless communications services by incumbent licensees.

3. The following is a summary of our major proposals and determinations. In the ***NPRM,*** we:

- Seek comment on whether and how to reconfigure the 2500-2690 MHz band;
- Seek comment on the best means of ensuring the efficient utilization of unassigned ITFS spectrum, including geographic area licensing and unlicensed operation;
- Propose to convert site-by-site licenses of MDS and ITFS incumbents to geographic service areas;
- Seek comment on how best to promote increased access to and efficient utilization of ITFS spectrum;
- Propose technical rules to increase licensee flexibility and protect incumbent operations in the 2500-2690 MHz band;
- Propose technical and service rules for mobile operations;
- Propose to simplify and streamline the licensing process for the Services;
- Propose application filing and processing procedures to facilitate implementation of the Services into the Universal Licensing System (ULS) administered by the Wireless Telecommunications Bureau; and

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[2] A Proposal for Revising the MDS and ITFS Regulatory Regime, submitted by the Wireless Communications Association International, Inc., the National ITFS Association and the Catholic Television Network, RM-10586 (filed Oct. 7, 2002). WCA is the trade association of the wireless broadband industry. NIA is a non-profit, professional organization of ITFS licensees, applicants and others interested in the ITFS. CTN is an association of Roman Catholic archdioceses and dioceses that operate many of the largest parochial school systems in the United States. These entities represent that the proposals contained in the paper reflect a consensus among the organizations concerning rule changes for the 2500-2690 MHz band. See Coalition Proposal at 1, n. 1

[3] Two-way data and mobile communications are permissible in the 2500-2690 band under existing rules, but the existing regulatory structure has limited the ability of operators to deploy two-way services and made it nearly impossible to provide mobile services.

- Propose to consolidate all service-specific rules for the Services under Parts 27 and 101 but seek comment on alternatives.

4. In the *MO&O*, we:

- Temporarily suspend, until the completion of this rulemaking proceeding, acceptance of applications for new ITFS licenses and applications to amend or modify either ITFS or MDS stations in the 2500-2690 MHz band, subject to certain exceptions; and

- Suspend the current construction deadline for MDS and ITFS authorization holders until the completion of this rulemaking proceeding.

5. In addition, we incorporate the dockets of two ongoing Commission proceedings into this *NPRM & MO&O* because they pertain to the Services.[4] In MM Docket No. 97-217, we address a minor issue concerning response stations that are not engaged in communications with their associated hubs to restrict their field strengths. In WT Docket No. 02-68, we propose to establish a Gulf of Mexico service area for the Services and issue licenses on that basis.

II. BACKGROUND

A. Establishment and Evolution of the Services

6. Prior to 1963, the Commission allocated the 2500-2690 MHz band to the Fixed Service for shared use by Operational Fixed Service (OFS) stations and international control stations.[5] The traditional Fixed Service use of this band was primarily private microwave communications uses such as multichannel voice and data circuits.[6]

7. In 1963, the Commission established ITFS in the band on a shared basis with existing Fixed Service stations.[7] When the Commission established ITFS, it indicated that the service was envisioned to be used for transmission of instructional material to selected receiving locations in accredited public and

[4] *See* Amendment of Parts 21 and 74 of the Commission's Rules With Regard to Licensing in the Multipoint Distribution Service and in the Instructional Television Fixed Service for the Gulf of Mexico, ***Notice of Proposed Rulemaking,*** WT Docket No. 02-68, 17 FCC Rcd 8446 (2002) (*Gulf Notice*); ***see also.*** Amendment of Parts 1, 21 and 74 to Enable Multipoint Distribution Service and Instructional Television Fixed Service Licensees to Engage in Fixed Two-way Transmissions, ***Report and Order on Further Reconsideration and Further Notice of Proposed Rulemaking,*** MM Docket No. 97-217, 15 FCC Rcd 14,566 (2000) (*Two-way FNPRM*).

[5] Amendment of the Commission's Rules With Regard to the Instructional Television Fixed Service, the Multipoint Distribution Service. and the Private Operational Fixed Microwave Service; and Applications for an Experimental Station and Establishment of Multi-Channel Systems, ***Report and Order,*** 48 Fed. Reg. 33873 ¶ 8 (1983) (*1983 R&O*).

[6] ***See 1983 R&O***, 48 Fed. Reg. 33873 ¶ **12.** Other Part 101 licensees have been authorized to use the band by waiver. ***See*** Applications of Nevada Bell for Construction and Authorization in the Point-to-Point Microwave Radio Service and Request for Waiver of the Rules, ***Memorandum Opinion and Order,*** 3 FCC Rcd 7217 (CCB and MMB 1988)

[7] ***See*** Educational Television ***Report and Order.*** Docket No. 14744, 39 FCC 846 (1963) (*MDS R&O*), ***recon. denied,*** 39 FCC 873 (1964) (*ETV Decision*).

private schools, colleges and universities for the formal education of students.' It also permitted ITFS licensees to use the channels for incidental purposes. These incidental purposes included the transmission of cultural and entertainment material to those receiving locations; the transmission of special training material to selected receiving locations outside the school system such as hospitals, nursing homes, training centers, clinics, rehabilitation centers, commercial and industrial establishments: the transmission of special material to professional groups or individuals to inform them of new developments and techniques in their fields and instruct them in their use; and to perform other related services directly concerned with formal or informal instruction and training.' In addition, when the ITFS facilities were not being used **for** such incidental purposes, the licensee could use them for administrative traffic (*e.g.*, transmission **of** reports, assignments and conferences with personnel):'' however, individual stations, or complete systems could not **he** licensed solely for handling administrative traffic [11]

8. In an effort to promote the development of ITFS during its infancy, the Commission in 1963 restricted the authorization of new **OFS** stations **for** three years except **for** modifications or expansions of existing stations, or for the use of the band by OFS eligible entities for television transmission in accord with **ITFS** technical standards.'' The Commission placed this restriction on new **OFS** stations because it intended to observe the amount of use of these channels by educators and determine what course **of** action to take to encourage the fullest development of the 2500-2690 MHz band at the end of the three-year period.'' Based in part on those observations, in 1971 the Commission designated twenty-eight 6-megahertz channels in this band and the associated response (R) channels[14] exclusively for ITFS use.[15]

9. In 1974, the Commission established MDS as a new common carrier service and allotted the 2150-2160 MHz band for such use.[16] The Commission anticipated that the MDS spectrum would be used

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[8] ***See 1983 R&O,*** 48 Reg. Fed. 33873,33875¶ 9 ***citing ETV Decision***, 39 FCC 846,853 ¶ 25

[9] *Id.*

[10] ***Id.***

[11] *Id.*

[12] ***See 1983 R&O***, 48 Fed. Reg. 33873,33875¶ 8, *citing ETV Decision* 39 FCC 846.

[13] *Id.* This review of the use of the band was delayed because educational interests encountered problems in preparing, funding, implementing and developing operational expertise with regard to ITFS.

[14] Each of the six megahertz channels in the 2500-2690 MHz band has an associated 125 kilohertz response channel. The response channels are narrowband audio channels located in the 2686-2689.875 MHz segment of the band and generally used with the associated primary 6-megahertz channel for two-way communications (*e.g.*, talk-back capability from remote sites such as classrooms).

[15] ***See*** Amendment of Parts 2 and 74 of the Commission's Rules and Regulations to Establish a New Class of Educational Television Service for the Transmission of Instructional and Cultural Material to Multiple Receiving Locations on Channels in the 2500-2690 MHz Frequency Band, Amendment of Parts 81, 87, 89, 91, and 93. *Second Report and Order*, Docket No. 14744, 30 F.C.C.2d 197 ¶ 12 (1971) ***(MDS 2nd R&O).***

[16] Amendment of Parts 1, 2, 21, and 43 of the Commission's Rules and Regulations to Provide for Licensing and Regulation **of** Common Carrier Radio Stations in the Multipoint Distribution Service, ***Report*** *and* ***Order.*** Docket No. 19493, 45 FCC 2d 616 (1974), ***recon. denied,*** 57 FCC **2d** 301 (1975) ***(1974 R&O). See also 1983*** *R&O,* **48** Fed. Reg. 33873 ¶ 5. Amendment of Parts 2 and 74 of the Commission's Rules to Establish a New Class **of** Educational Television Service for the Transmission **of** Instructional and Cultural Material to Multiple Receiving (continued....)

for the common carrier distribution of television programming from a central location to numerous points selected by the common carriers' subscribers, sometimes referred to as wireless cable." The Commission allotted two 6 MHz channels (2150-2162 MHz) in fifty of the largest metropolitan areas (referred to as MDS Channel Nos. 1 and 2).[18] In the rest of the country, only ten megahertz of spectrum is allotted to MDS in this band —namely, Channel No. 1 (2150-2156 MHz) and Channel No. 2A (2156-2160 MHz).

10. In **1983,** in response to the demand ***for*** additional spectrum for delivery of video entertainment programming to subscribers, the Commission reallotted eight of the ITFS channels and associated (R) channels (E and F Channels) for MDS.[19] In reaching this decision, the Commission determined that the ITFS spectrum was underutilized given that there were a substantial number of unused ITFS channels in many areas of the country, with several states having no ITFS licensees." It appeared that, while some growth in the ITFS service would occur, this growth was unlikely to exhaust all of the ITFS spectrum.[21] In 1983, the Commission also began allowing ITFS licensees to lease excess capacity on their facilities to commercial entities.[22] Following that decision, there was a significant increase in the number of applications filed for new ITFS facilities.[23] In 1985, the Commission amended its rules to relax the restrictions governing the leasing of excess capacity to commercial providers.[24] For example, the Commission reduced the educational obligations ***of*** ITFS operators to a minimal level,

(Continued from previous page)
Locations on Channel in the 2500-2690 MHz Frequency Band, Docket No. 14744, ***Second Report and Order,*** 30 F.C.C.2d 197, ¶ 8 (1971).

[17] ***Id.***

[18] Amendment of Part 21.703(g), and **(h)** of the Commission's Rules, ***Memorandum Opinion and Order,*** 47 F.C.C.2d 957 (1970).

[19] Amendment of Parts **2,** 21, 74 and 94 **of** the Commission's Rules and Regulations in regard to frequency allocation to the Instructional Television Fixed Service, the Multipoint Distribution Service, and the Private Operational Fixed Microwave Service: Inquiry into the development of regulatory policy with regard to future service offerings and expected growth in the Multipoint Distribution Service and Private Operational Fixed Microwave Service, and into the development of provisions of the Commission's Rules and Regulations in regard to the compatibility of the operation of satellite services with other services authorized to operate in the 2500-2690 MHz band; Amendment of Part 21 of the Commission's Rules to Permit the Use of Alternative Procedures in Choosing Applicants for Radio Authorizations in the Multipoint Distribution Service; Petition for Rulemaking filed by Microband Corporation of America to amend Section 21.901 of the Commission's Rules and Regulations, ***Report and Order,*** Gen Docket No. 80-112 and CC Docket No. 80-116, 94 F.C.C.2d 1203 (1983) ***(Allocation R&O).***

[20] Amendment of Parts ***2,*** 21, 74 and 94 of the Commission's Rules and Regulations in regard to frequency allocation to the Instructional Television Fixed Service, the Multipoint Distribution Service, and the Private Operational Fixed Microwave Service, ***Repon and Order,*** 94 F.C.C.2d 1203 ¶ 4 (1980).

[21] *Id*

[22] Amendment of the Commission's Rules With Regard to the Instructional Television Fixed Service, the Multipoint Distribution Service, and Applications for an Experimental Station and Establishment of Multi-Channel Systems, ***Report and Order,*** 94 F.C.C.2d 1203 (1983) ***(First Leasing Decision).***

[23] ***See*** paras. 113-118 for further discussion of leasing practices and **issues.**

[24] Amendment ***of*** Part 74 ***of*** the Commission's Rules and Regulations in Regard to the Instructional Television Fixed Service, ***Second Repon and Order,*** 101 FCC 2d 50.87 ¶ 95 (1985).

ultimately allowing them to lease all but a **small** proportion of their capacity to commercial operators.[25] While the ITFS community requested that twenty-five percent be required to be used for educational purposes or available **for** recapture for educational purposes, the Commission decided to allow ITFS licensees to reserve only five percent **for** educational **purposes.**[26] In 1987, the Commission allowed MDS operators to elect non-common carrier (and non-broadcast) status, leaving them subject to regulation pursuant to Part 21 of the Commission's Rules and the general provisions of Title III of the Communications Act of 1934, which apply to all radio station licensees.[27] The same year, the Commission eliminated the time-ofday restrictions on leasing ITFS spectrum and authorized operators to use automatic switching **equipment.**[28] In this same general timeframe. the Commission continued to relax requirements concerning ITFS licensees leasing spectrum for MDS operations.[29]

11. For several years, the International Telecommunication Union (ITU) has been fostering the development of advanced wireless systems, commonly referred to as International Mobile Telecommunications-2000 (IMT-2000). It has developed a series of technical recommendations and has identified a number of frequency bands that could be used to implement IMT-2000 systems. The 2000 World Radiocommunication Conference (WRC-2000) identified, among other bands, the 2500-2690 MHz band for possible terrestrial IMT-2000 use.[30] WRC-2000 also adopted language stating that a country may use any of the bands identified for IMT-2000, that IMT-2000 bands may also be used by other services that have allocations in those bands, and that JMT-2000 services do not have priority over other allocated services." Study and implementation of IMT-2000 is ongoing within Working Party 8F (WP 8F) of the ITU-R.

12. WP 8F has developed a revision to Recommendation ITU-R M.[1036-1] that presents recommended frequency arrangements **for** IMT-2000 in the bands identified by the ITU. It is expected that this revision will be considered for adoption by the upcoming meeting of the Radio Assembly which

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[25] ***See*** para. 109, ***infra.***

[26] ***See*** Amendment of Parts 21 and 74 to Enable Multipoint Distribution Service and Instructional Television Fixed Service Licensees to Engage in Fixed Two-way Transmissions, ***Report and Order,*** 13 FCC Rcd 19112, 19157 ¶¶ 86-87 (1998).

[27] Multipoint Distribution Service Regulatory Classification, ***Report and Order, 52*** Fed. Reg. 27553 (1987) (summarizing FCC 87-210, released July 16, 1987).

[28] Amendment of Parts 21, 43, 74.78, and 94 of the Commission's Rules Governing Use of the Frequencies in the 2.1 and 2.5 GHz Bands Affecting: Private Operational-Fixed Microwave Service, Multipoint Distribution Service, Multichannel Multipoint Distribution Service, Instructional Television Fixed Service, & Cable Television Relay Service, GN Docket No. 90-54, ***Order on Reconsideration,*** 6 FCC Rcd 6764,6774 (1991).

[29] For example, the Commission eliminated the requirement that ITFS licensees fulfill their minimum educational usage obligations by transmitting such content on their own stations, allowing them the option **of** transmitting it on other licensees' ITFS or MDS stations. ***See Two-way R&O***, 13 FCC Rcd at 19165-19166 ¶¶ 100-101.

[30] ***See Final Acts of the World Radiocommunication Conference (Istanbul, WRC-2000).*** At WRC-2000, the United Sates proposed that the 698-960 MHz, 1710-1885 MHz, and 2500-2690 MHz bands be identified for the terrestrial component of IMT-2000 and other advanced communication applications. During preparations for WRC-2000, the United States committed to studying the feasibility of using all **or** parts of these bands for IMT-2000.

[31] ***Id. See*** also RR 5.384A in the ITU Radio Regulations, Edition of 2001, Geneva.

meets just prior to WRC-2003. Concerning the 2500-2690 MHz band, the revision to the recommendation contains only scenarios for possible frequency arrangements, as this band is currently being considered by some administrations for additional IMT-2000 requirements that cannot be met in lower frequency bands.

13. In this regard, on November 15, 2002, the Electronic Communications Committee (ECC), of the European Conference of Postal and Telecommunications Administrations, adopted Decision 6, wherein it designated the 2500-2690 MHz band for IMT-2000 use. The band is to be made available to IMT-2000 by 1 January 2008. Through a future ECC Decision, slated for the end of 2004, a detailed frequency arrangement (band plan) is to be developed. In ITU Region 2, The Inter-American Telecommunication Commission (CITEL) Permanent Consultative Committee III: Radiocommunications (PCC.III) has also been developing, for the Americas, options for IMT-2000 band pairings based on the bands identified for JMT-2000 by the ITU. Since many CITEL Administrations use the 2500-2690 MHz band for the fixed service and have no plans to use it for IMT-2000, the 2500-2690 MHz band was not included in recently approved Recommendation 70. ***Frequency Arrangements For IMT-2000 In The Bands 806 To 960 MHz, 1710 To 2025 MHz And 2110 To 2200 MHz.***

14. In 1991, in an effort to provide more spectrum for multichannel video operations, the Commission reallotted three 6-megahertz channels in the 2500-2690 MHz band (H channels) from the OFS for MDS.[32] The Commission, however, did reallocate the response channels associated with the three H channels, as well as the response channels associated with the E3, E4, F3, and F4 MDS channels to the OFS.[33] The net result of these reallocations was to provide an allocation of 120 MHz, or 20 6-MHz main station channels, to ITFS, and 66 MHz, or 11 main station channels, to MDS in the 2500-2690 MHz band. In addition, the MDS service has four 125-KHz response channels (a total of 0.5 MHz), and ITFS has 20 response channels (a total of 2.5 MHz).[34] As noted above, OFS has seven response channels (a total of 0.875 MHz). The remaining spectrum is either allocated for the MDS Channel 1 (2150-2156 MHz associated response channel or is unassigned (2689.875-2690 MHz)). Overall, the allocation for MDS amounts to 66.5 MHz and the allocation for ITFS amounts to 122.5 MHz.

15. The Commission added the mobile service allocation to this band, to provide additional flexibility to make it potentially available for advanced wireless services, including IMT-2000 and future

[32] Amendment of Parts 21, 43, 74, 78, and 94 of the Commission's Rules Governing Use of the Frequencies in the 2.1 and 2.5 GHz Bands Affecting: Private Operational-Fixed Microwave Service, Multipoint Distribution Service. Multichannel Multipoint Distribution Service, Instructional Television Fixed Service, and Cable Television Relay Service, *Second* ***Report and Order,*** Gen Docket No. 90-54, 6 FCC Rcd 6792 (1991), ***recon. denied,*** 7 FCC Rcd 5648 (1992). In the ***First Report & Order*** in this proceeding, the Commission made MDS operators eligible to use microwave frequencies in the Cable Television Relay Service (CARS). Amendment of Parts 21, 43, 74, 78 and 94 of the Commission's Rules Governing Use of the Frequencies in the 2.1 and 2.5 GHz Bands Affecting Private Operational-Fixed Microwave Service, Multipoint Distribution Service, Multi-Channel Multipoint Distribution Service, Instructional-Television Fixed Service, and Cable Television Relay Service, ***Report and Order, 5*** FCC Rcd 6411, 6423 (1990). CARS is primarily a service for carrying video. Amendment of Eligibility Requirement in Part 78 Regarding 12 GHz Cable Television Relay Service, ***Report and Order,*** 17 FCC Rcd 9930, 9945-6 (2002). ITFS operators are not eligible for CARS licenses, except in very limited circumstances. 47 C.F.R. § 78.13(e).

[33] ***Id.*** The specific response channels are centered on 2686.9375, 2687.9375. 2688.5625, 2688.6875, 2688.9375, 2689.5625 and 2689.6875 MHz. See 47 C.F.R. § 101.147(g).

[34] The response channels associated with Channels E3, E4, F3. and F4 are allocated to the Private Operational Fixed Point-to-Point Microwave Service. ***See*** 47 C.F.R. §§ 74.902(c) note, 101.147(g).

generations of wireless systems.[35] The Commission also said that because incumbent ITFS and MMDS licensees extensively use the band the Commission would not relocate these licensees nor modify their licenses. Instead, the Commission would rely on market forces rather than making regulatory judgments about the best use of the band.[36] The Commission recognized that under current technology and service rules, fixed and mobile sharing of this band did not appear feasible, but committed to exploring service rules to permit mobile operations in a separate future proceeding."

16. ITFS licenses are site-based licenses. Prior to 1995, MDS licenses were also site-based. In 1995, the Commission adopted rules to distribute unused MDS spectrum through competitive bidding.[38] The licensees who acquired their spectrum through competitive bidding are required to protect pre-existing site-based licensees.[39] Under current rules, if an incumbent site-based MDS license is forfeited, the incumbent's service area shall merge and become part of the geographic area licensee's service area.[40] The BTA authorization holder, however, cannot operate within that area until it files a long form application to operate a transmitter and the Commission grants that application.[41]

17. Recently, the Commission has provided MDS and ITFS licensees with additional technical flexibility. In 1993, the Commission allowed ITFS licensees to shift their required educational programming onto fewer than their authorized number of channels by channel loading, i.e., an ITFS licensee could move all of its ITFS program requirements onto one of its four channels so that it could lease the remaining three channels on a twenty-four-hour basis to a wireless cable operator.[42] In 1996. the Commission permitted MDS and ITFS licensees to employ digital technologies.[43] In 1998, the Commission allowed MDS and ITFS licensees to construct digital two-way systems capable of providing

[35] ***See*** Amendment of Part 2 of the Commission's Rules ***to*** Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to **Support** the Introduction of New Advanced Wireless Services, including Third Generation Wireless Systems, ***First Report and Order and Memorandum Opinion and Order,*** ET Docket No. 00-258, 16 FCC Rcd 17,222 (2001) ***(Mobile Report and Order).***

[36] ***Id. at*** 2.

[37] *Id.* at 30.

[38] ***See*** Amendment of Parts 21 and 74 of the Commission's Rules with Regard to Filing Procedures in the Multipoint Distribution Service and in the Instructional Television Fixed Service, ***Report and Order,*** MM Docket No. 94-131, 10 FCC Rcd 9589 (1995) (***MDS Auction R&O***). In March 1996, the Commission completed an auction of MDS licenses for unused spectrum in each of 493 BTAs and BTA-like areas. FCC Fact Sheet, ***Auction 6: Multipoint/Multichannel Distribution Services,*** accessible on the Commission's web site at http://wireless.fcc.gov/auctions/06/factsheet.html.

[39] See 47 C.F.R. §§ 21.902(a)(3),(4); 21.938(b)(2)

[40] 47 C.F.R. § 21.932(a).

[41] 47 C.F.R. §§ 21.925(c)(4), 21.932(c)

[42] Amendment of Part 74 of the Commission's Rules Governing Use of the Frequencies in the instructional Television Fixed Service, ***Report and Order,*** MM Docket 93-106, 9 FCC Rcd 3,360 ¶ 2. See ***also*** 47 C.F.R. § 74.931(e)(9).

[43] ***See*** Use of Digital Modulation by Multipoint Distribution Service and Instructional Television Fixed Service Stations, ***Declaratory Ruling and Order,*** 11 FCC Rcd 18,839 (1996) ***(Digital Modulation Declaratory Ruling and Order).***

high-speed, high capacity broadband service, including two-way Internet service via cellularized communication systems.[44] Later, the Commission established a mobile, except aeronautical mobile, allocation in the 2500-2690 MHz band.[45]

B. Spectrum Allocation and Current Band Plan for the Services

18. In the United States, the 2500-2690 MHz band is currently allocated to the fixed, mobile except aeronautical mobile, Broadcast Satellite Service (BSS), and Fixed Satellite Service (FSS) on a co-primary basis for non-Federal Government use. The Commission, however, recently proposed to delete the BSS and FSS allocations from the band in order to remove regulatory uncertainty from the 2500-2690 MHz band.[46]

19. Since January 2001, the Commission has been examining whether the 2150-2162 MHz band would be appropriate for advanced wireless services (AWS).[47] In 2002, the Commission reallocated the 2150-2155 MHz segment of this band to support new advanced wireless services.[48] The Commission stated that it would identify relocation spectrum for MDS licensees in a later, separate proceeding,[49] and has asked commenters to address the impact of reallocating this spectrum, to identify other frequency bands that could accommodate MDS services, and to comment on how the Emerging Technologies relocation procedures would apply.[50] Subsequently, on January 29, 2003, the Commission tentatively concluded that it should reallocate MDS spectrum at 2155-2160/62 MHz for new fixed and mobile

[44] Amendment of Parts 21 and 74 to Enable Multipoint Distribution Service and Instructional Television Fixed Service Licensees to Engage in Fixed Two-way Transmissions, MM Docket No. 97-217, ***Report and Order,*** 13 FCC Rcd 19,112 (1998), ***recon.,*** 14 FCC Rcd 12,764 (1999), *further* ***recon.,*** 15 FCC Rcd 14,566 (2000) ***(Two-Way Order).***

[45] ***See Mobile Report and Order,*** 16 FCC Rcd 17,222.

[46] ***See*** Amendment of Parts 2, 25 and 87 of the Commission's Rules to Implement Decisions from World Radiocommunication Conferences Concerning Frequency Bands Between 28 MHz and 36 GHz and to Otherwise Update the Rules in this Frequency Range, ***Notice*** of ***Proposed Rule Making,*** ET Docket No. 02-305, 17 FCC Rcd 19,756 (2002).

[47] Advanced Wireless Services is the collective term we use for new and innovative fixed and mobile terrestrial wireless applications using bandwidth that is sufficient for the provision of a variety of applications, including those using voice and data (such as internet browsing, message services, and full-motion video) content. Although AWS is commonly associated with so-called third generation (3G) applications and has been predicted to build on the success of such current-generation commercial wireless services as cellular and Broadband PCS, the services ultimately provided by AWS licensees are only limited by the fixed and mobile designation of the spectrum we allocate for AWS and the service rules we ultimately adopt for the bands.

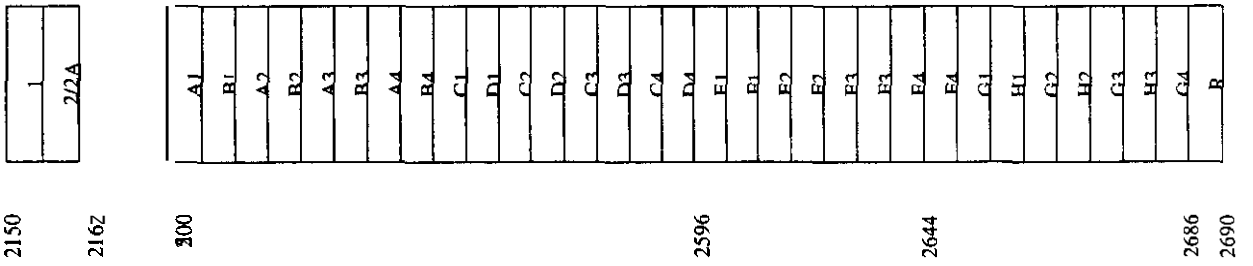
[48] ***See AWS Allocation Order,*** 17 FCC Rcd 23,193

[49] ***Id.*** at 23,212-23,213 ¶ 41

[50] ***See*** Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, including Third Generation Wireless Systems. ET Docket No. 00-258, ***Memorandum Opinion and Order and Further Notice of Proposed Rulemaking,*** 16 FCC Rcd 16,043 ¶¶ 40-41 (2001).

services, including AWS.[51]

20. Under the MDS/ITFS band plan for the 2500-2690 MHz band, there are thirty-one 6-megahertz channels, **of** which twenty-four have associated, 125-kilohertz **(R)** channels. Of the thirty-one 6-megahertz channels in the 2500-2690 MHz band, the Commission has allocated twenty channels (A, **B,** C, D, and G channels) for ITFS and eleven channels (E, F, and H channels) for **MDS.** (This does not include the two additional MDS channels at 2150-2162 MHz.). The following chart illustrates the current plan



C. Application Processing Freezes and Filing Windows

21. In **1993,** the Commission suspended the ITFS applications process and announced plans to adopt a revised process for handling such applications.[52] At the same time, the Commission noted that it would continue to accept major change proposals for ITFS applications to accommodate settlement agreements among mutually exclusive applicants.[53] In 1995, the Commission provided a five-day filing window for the filing **of** applications for new construction permits and for major changes to existing **ITFS** facilities.[54] In 1996 the Mass Media Bureau announced a sixty-day filing window for a limited class of applications, permitting the tiling of **ITFS** modification applications and amendments to pending ITFS applications proposing to co-locate with an authorized wireless cable facility, in order, ***inter alia,*** to facilitate marketwide settlements.[55]

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[51] ***See*** Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, including Third Generation Wireless Systems, ***Third Report and Order, Third Notice of Proposed Rulemaking, and Second Memorandum Opinion and Order,*** **ET** Docket No. 02-258, FCC 03-16. rel. Feb. 10,2003.

[52] Amendment of Part 74 of the Commission's Rules with Regard to the Instructional Television Fixed Service, ***Notice*** of ***Proposed Rulemaking,*** MM Docket No. 93-24, 8 FCC Rcd 1275 (1993).

[53] ***Id.*** at 1277 n.13. ***See also*** Amendment of **Part** 74 of the Commission's Rules with Regard to the Instructional Television Fixed Service, ***Order and Further Notice*** of ***Proposed Rulemaking.*** MM Docket No. 93-24, 9 FCC Rcd 3348, 3354 (1994). The Commission reiterated this policy in the ***Reporf and Order*** in MM Docket No. 93-24, 10 FCC Rcd 2907,2911 (1995).

[54] ***See*** Notice of Instructional Television Fixed Service Filing Window From October 16, 1995, through October 20, 1995. ***Public Notice,*** Report No. 23565A (rel. Aug. 4, 1995).

[55] Mass Media Bureau Announces Commencement of Sixty (60) Day Period for Filing ITFS Modifications and Amendments Seeking to Co-Locate Facilities with Wireless Cable Operations, ***Public Notice,*** 11 FCC Rcd 22,422 (1996).

22. The Balanced Budget Act of 1997 (Budget Act) expanded the Commission's competitive bidding authority under Section 309(j) of the Communications Act by adding provisions governing auctions for broadcast and other previously exempt services.[56] In a subsequent order, the Commission concluded that the legislation required that competing ITFS applications be subject to auction." The Commission expressed concern that Section 309(j), as adopted, might not reflect Congress' intent with regard to the treatment of competing ITFS applications.[58] Given the instructional nature of the service and the reservation of ITFS spectrum for noncommercial educational use, the Commission thought it possible that Congress did not intend its expansion of our auction authority in the Budget Act to include that service. Accordingly, the Commission did not proceed immediately with an auction of ITFS applications[59] but sought Congressional guidance with regard to auctioning ITFS by proposing that Congress exempt ITFS applications from competitive bidding." To date, however, Congress has given no indication that it intends to exempt ITFS applications from competitive bidding. The Commission has not yet conducted an ITFS auction.

D. Current Uses of the Band

23. Operators are providing four kinds of basic service offerings in the 2500-2690 MHz band today: (1) downstream analog video; (2) downstream digital video; (3) downstream digital data; and (4) downstream/ upstream digital data. Licensees have deployed or sought to deploy three alternative kinds of system configurations: high powered video stations, high power fixed two-way systems and low power, cellularized two-way systems.

24. Traditionally high powered video stations consist of a main transmitter located at or near the center of a 35-mile-radius protected service area (PSA) with the possibility of operating a few booster stations in the same PSA. In 1996, the Commission authorized some high powered video stations to serve Basic Trading Areas (BTAs) consisting of an aggregation of counties.[61] Homes, businesses, and institutions receive signals through outside antennas and microwave receivers. This type of system provides fixed, one-way video service, either analog or digital. Analog stations support a maximum of

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[56] 47 U.S.C. § 309(j).

[57] Implementation of Section 309(j) of the Communications Act—Competitive Bidding for Commercial Broadcast and Instructional Television Fixed Services Licenses, Reexaminiation of the Policy Statement on Comparative Broadcast Hearings, Proposals to Reform the Commission's Comparative Hearing Process to Expedite the Resolution of Cases, ***First Reporr and Order,*** MM Docket No. 97-234, GC Docket No. 92-52, and GEN Docket No. 90-264, 13 FCC Rcd 15920, 15999-16001 (1998). ***recon. denied,*** 14 FCC Rcd 8724, *modified*, 14 FCC Rcd 12,541 (1999). ***aff'd sub nom. Orion Communications, Ltd. v. FCC,*** 213 F.3d 761 (D.C. Cir. 2000).

[58] Implementation of Section 309(j) of the Communications Act—Competitive Bidding for Commercial Broadcast and Instructional Television Fixed Service, ***First Report and Order,*** MM Docket No. 97-234, 13 FCC Rcd 15920. 16002 ¶ 204 (1998).

[59] ***Id.***

[60] Section 257 Report to Congress, *Report*, 15 FCC Rcd 15376, 15445 ¶ 183 (2000).

[61] In preparing for the 1996 MDS auction, the Commission noted that the industry was beginning to deploy digital rather than analog transmission facilities and that digital transmission would allow more flexibility to tailor signal coverage to geographic boundaries using multiple transmitting facilities. ***MDS Aucrion Report and*** Order, 10 FCC Rcd 9,589, 9,606, ¶ 29. The Commission considered alternative kinds of geographic service areas and concluded that BTAs most closely approximated the territories served by MDS operators. *Id.* at 9604-9606, ¶¶ 26-27.

thirty-three 6-MHz channels on a combination of MDS and ITFS channels, which may be licensed to and leased from multiple entities; whereas digital stations can support 180 or more channels on the same amount of spectrum. The WCA informally has estimated that 120-130 MDS/ITFS systems are transmitting video programming to subscribing members of the public and that a few additional stations deliver video programming exclusively to educational reception sites or to cable television systems for retransmission.[62] Both WCA and a number of ITFS licensees have indicated that a majority of the licensees operating these high-power stations are actively exploring conversion to low-power, cellularized operations.[63]

25. The high powered fixed two-way systems each consist of one high-powered main transmitter. multiple return-path transmitters and, in some cases, one or more booster stations. This type of system is used primarily in rural areas where population densities are much lower than those in urban areas. By September, 2002, our Broadband Licensing System showed about eighty-seven operators are deploying data-only MDS or ITFS services in the **U.S.** We believe that many of these licensees are offering their services in conjunction with other local licensees through integrated systems. Thus, WCA representatives have estimated that there are thirty-to-forty markets in which data-only services are being marketed, and that all but perhaps five to eight of them are using high-power technology.

26. As discussed in further detail below, most MDS operators and a substantial proportion of ITFS operators would like to deploy low power, cellularized two-way systems, because they are more spectrally efficient than high-powered systems, can support provision of high-data-rate services to a large number of subscribers, can help overcome obstacles to line-of-sight service, and can more readily support mobile or portable services.[64] **Our** MDS/ITFS licensing database system cannot readily show how many of these systems are currently deployed, but we believe that interference issues have severely limited licensees' ability to deploy low power services. WCA estimates that low-power, cellularized MDS/ITFS data services are being offered in perhaps five-to-eight markets.

27. By the beginning of 2002, the potential number of homes with a serviceable line-of-sight to an MDS operator's transmission facilities was about sixty-two million. Yet, by the third quarter of 2002. the number of MDS subscribers had declined to approximately 490,000 from 700,000 a year earlier.[65] Recently, some entities began using this band to provide services other than a multi-channel video service (i.e., two-way broadband services). The Coalition reports that Sprint, for example, deployed two-way broadband services in fourteen cities over the course of a year beginning in March 2000, and was signing up about 2,000 customers per month before the company halted deployment to resolve technical problems that arose with the first generation of two-way technology.[66]

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[62] In many cases. such systems use channels held by multiple licensees.

[63] **See,** *e.g.,* Joint Comments **of** ITFS Parties, filed Nov. 14,2002.

[64] ***See*** sections III.C and III.D, below.

[65] ***BIA Financial Network, The MMDS Industry: A Look Into the Industry's Most Significant Operators,*** Sept. 2002, at 5.

[66] ***Coalition Proposal*** at **4.** While operators have only begun to provide mobile data services on channels allocated to MDS and ITFS, a strong growth spurt in such services on other bands suggests that there **is** ample unsatisfied demand for mobile data. The number **of** wireless data users may have quintupled during 2001. to between eight and ten million subscribers. ***See*** Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of **1993,** Annual Report and Analysis **of** Competitive Market Conditions with Respect **to** Commercial Mobile (continued....)

28. By January 2002, Sprint and WorldCom had each invested more than $2 billion acquiring MDS licensees covering about 31 and 30 million households, respectively, and each of those companies had spent another $1 billion on system construction.[67] WorldCom was rolling out MDS high-speed Internet access in new markets, many of them rural.[68] The third largest MDS company, Nucentrix Broadband Services, Inc., was offering two-way high-speed Internet access service in Austin and Sherman-Denison. Texas, and conducting a trial of the service in Amarillo, Texas. and at least twenty-four other companies offered fixed wireless services in approximately thirty-three counties.[69] In November 2002, Clearwire Technologies, Inc., filed comments indicating that it had leased ITFS spectrum in more than 20 markets and would launch a wireless broadband Internet access service in the first of those markets in January, 2003.[70]

29. We are not aware of any current, comprehensive source of information on the nature or extent of ITFS services other than our license files. However, in response to the public notice seeking comments on the Coalition Proposal?' eight ITFS licensees and related organizations provided quantified information on the extent of their own services, most of them local. Various local branches of the Roman Catholic Church provide ITFS programming to 153,000 students.[72] The F Corporation and the George Mason University (GMU) Instructional Foundation provide GMU instructional programming, C-

(Continued from previous page)
Services, ***Seventh Report,*** 17 FCC Rcd 12,985, 13,038 n.367 (2002) (***Seventh Report) citing U.S. Wireless Industry Data Sub and Revenue Projections, Interactive Mobile Investor,*** Kagan World Media, Mar. 31, 2002, at 3 (7.8 million wireless Internet subscribers in the United States at the end of 2001); Yankee Group, ***The Yankee Group: Highlights of New Surveys and Publications*** (visited Mar. 6, 2002) http://www.yankeegroup.com/webfolder/ygZla.nsf/O/ 16AE3A28DBFF8EC85256B19005F8428?OpenDocument> (wireless Internet adoption was "rapidly approaching 10 million users").

[67] ***Id.***

[68] ***Id.***

[69] ***Id.***

[70] Clearwire Technologies, Inc., Comments in RM-10586, at *2* filed November 14, 2002. On January 7, 2003, Clearwire announced the availability of its service in Jacksonville, Florida. News Release, Clearwire Launches Next-Generation Wireless Broadband Service, Jan. 7, 2003 (accessible online at http://www.clearwire.com/default.asp?NodeId=967).

[71] Wireless Telecommunications Bureau Seeks Comment on Proposal to Revise Multichannel Multipoint Distribution Service and the Instructional Television Fixed Service Rules, ***Public Notice,*** 17 FCC Rcd 20526 (WTB 2002) (***MDS/ITFS Comment Public Notice).*** The due dates for comments and replies were initially set to November 14 and 21, 2002, but were later extended to November 21 and 29, respectively.

[72] ***See*** Archdiocese of Los Angeles Comments, filed Nov. 14, *2002,* at 2 (50,000 Los Angeles area students); ***See*** Department of Education, Archdiocese of New York Comments, filed Nov. 14, 2002 (47,000 New York area students); Catholic Telemedia Network Comments, at 1-2, filed Nov. 14, 2002, (38,000 San Francisco area students); Diocese of Orange Comments, at 1, filed Nov. 14, 2002, (18,000 Orange County area students); ***see also,*** Diocese of Dallas Comments, at 1, filed Nov. 14, 2002, (Claims to serve more than 600,000 "constituents" hut does not indicate how many use or have access to its ITFS channels). Forty-seven ITFS licensees filed joint comments that did not include quantified information on the extent of their operations. Joint Comments of ITFS Parties, filed Nov. 14, 2002.

SPAN, and open meetings of the Commission on analog ITFS and MDS channels.[73] Network for Instructional TV, Inc., and its affiliates distribute educational programming and services to students and teachers through a network of twenty-three ITFS stations and over the Internet.[74] The Illinois Institute of Technology uses seven of its eight ITFS channels to provide master's degree programs, certificate programs, and courses in engineering and the sciences, business and law.[75] Stanford University transmits hundreds of engineering and science courses each year to enrolled university students over five ITFS channels. It also provides for-credit course work to enrolled students at business sites throughout the Bay Area and non-credit instructional programming to several thousand more students.[76] The Commission's database as of November 6, 2000, showed that at least one ITFS station operates in most areas of the United States and that only in the least populated areas of the country is ITFS spectrum not currently occupied." At that time, the database also showed that in 49 of the 50 largest metropolitan areas that all thirty-one ITFS/MDS channels are licensed within 100 miles of the cities considered."

E. The Coalition Proposal

30. On October 7, 2002, the Coalition submitted a paper entitled "A Proposal for Revising the MDS and ITFS Regulatory Regime" ("Coalition Proposal") concerning recommendations for changing the rules governing the 2500-2690 MHz band.[79] In general, the Coalition argues that the band is not being used to the extent possible[80] and that rule changes are necessary to allow new services to develop. The Coalition envisions this band being used to provide new wireless two-way broadband services (*e.g.*, provide commercial service to portable, nomadic and mobile laptops, Personal Digital Assistants (PDAs) and other non-stationary devices) where the network architecture is based on a low power cellular concept. The Coalition contends that the explosive growth of 802.11b-compliant "hot spots" demonstrates that there is demand for this sort of service and that this band could be used to provide ubiquitous service, not just at hot spots. It points out that several MDS licensees are currently test marketing this new two-way broadband service." It asserts, however, that a "radical reworking of the

[73] F Corp. Informal Comments, dated Nov. 8,2002 (Provide programming to more than 1,750 offices, government agencies, law firms, trade associations. schools and universities in more than 540 buildings throughout metropolitan Washington, D.C., Maryland, and Virginia.

[74] Network for Instructional TV, Inc. and North Carolina Assn. of Community College Presidents Comments, at I n.1, filed Nov. 14, 2002.

[75] Illinois Institute of Technology Comments, at 3, filed Nov. 21,2002.

[76] Stanford University Comments, at 1-2, filed Nov. 14,2002.

[77] *Final Repon: Spectrum Study of the* 2500-2690 *MHz Band – The Potential for Accommodating Third Generation Mobile Systems,* FCC Staff Report, March 30, 2001 at 34-35 (3G *Final Repon)* (accessible on the Commission's web site at http://hraunfoss.fcc.gov/edocs public/attachmatch/DOC-211542A1.doc).

[78] *Id.* at 32.

[79] A detailed summary of the Coalition Plan is attached as Appendix C.

[80] For example, the Coalition contends that it has become clear that the growth of DBS and cable systems has "closed the window of opportunity for wireless cable" in all but a relatively few markets where wireless cable has gained a foothold. Coalition Proposal at 2. In regard to two-way services, the Coalition states because of problems associated with first generation two-way technology many in the industry have decided to halt deployment of additional first generation systems until those problems can be resolved. Coalition Proposal at 4.

[81] Coalition Proposal at 5-7.

MDS and ITFS regulatory structure is needed" for such new services to develop and flourish in this band.[82]

31. The Coalition suggests a number of proposals that it believes will promote new uses of this band. A detailed summary of the Coalition Plan is attached as Appendix C. For example, it proposes establishing a new band plan to facilitate advanced low power two-way broadband systems while at the same time protecting existing high-power systems (*e.g.*, video operations). The core of its proposal segregates high-power and low-power systems into separate segments of the band to avoid mutual interference. The Coalition proposal divides the band into three major segments and three smaller segments. The three major segments would consist of the Lower Band Segment (LBS) with twelve 5.5-megahertz-wide channels extending from 2500-2566 MHz, the Mid Band Segment (MBS) with seven 6-megahertz wide channels extending from 2572-2614 MHz and the Upper Band Segment (UBS) with twelve 5.5-megahertz wide channels extending from 2620-2686 MHz.[83] Low powered operations would use the LBS and UBS while high power video operations would operate in the MBS. The three minor segments would consist of the I band at 2686-2690 (narrowband auxiliary channels) and two transition bands or guard bands (J and K), one located between the LBS and MBS and one located between the MBS and the UBS. The Coalition also proposes (1) eliminating unnecessary regulatory burdens imposed by site-by-site licensing,[84] (2) revising the technical rules to make them less complex,[85] (3) establishing a market-by-market mechanism for transitioning to the new band plan and (4) eliminating outdated regulations. On October 17,2002, the Commission put the Coalition Proposal out on ***Public Notice***.[86]

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[82] See Letter from the Coalition to Thomas J. Sugrue, Chief, Wireless Telecommunications Bureau, Federal Communications Commission dated Oct. 7,2002 (accompanied the Coalition Proposal).

[83] The Coalition does not fully explain why it narrowed the channels in the LBS and UBS to 5.5 megahertz. The Coalition explains that

> [a]lthough the channels in the LBS and the UBS will be 5.5 MHz wide rather than 6 MHz wide and the channels in the Transition Band will be 1.5 MHz wide, no change in the current rules affording licensees the flexibility to subchannelize and superchannelize is proposed. Therefore, even after the transition licensees can continue to utilize 6 MHz channels in the LBS, the UBS, and the Transition Bands, provided that appropriate consents are achieved.

Coalition Proposal at 13, n.32,

[84] For example, the Coalition contends that under the current licensing model, it will take substantially more applications to license a populated market for second generation MDS service (*e.g.*, low power, two-way broadband service). It estimates that it could take close to two thousand applications under the current licensing approach to fully license the band for a second generation system in just one major market. This licensing model. according to the Coalition, results in substantial transaction costs and delays of providing service. See Coalition Proposal at 7-8.

[85] For example, the Coalition argues that "an applicant is required by the complex 'Appendix D' interference-prediction methodology to assume in conducting analyses that each and every one of its subscribers is located at the very point most likely to cause interference to a neighbor. In other words, an applicant proposing to provide service on a given channel to 1000 subscribers simultaneously is required to assume that all 1000 subscribers will be at the very spot most likely to cause interference. Unfortunately, these hypothetical assumptions, for all practical purposes, preclude system operators from serving substantial portions of their authorized territories. *See* Coalition Proposal at 3.

[86] *MDS/ITFS Comment* ***Public Notice.*** Fifty-three entities filed comments and eight filed reply comments. A list of commenting parties is provided in Appendix D.

Coalition Band Plan

Channel Designation	Lower Frequency	Upper Frequency		
A1	2500.0000	2505.5000	LOW POWER	Channels can be used for TDD or Upstream FDD
A2	2505.5000	2511.0000		
A3	2511.0000	2516.5000		
B1	2516.5000	2522.0000		
B2	2522.0000	2527.5000		
83	2527.5000	2533.0000		
C1	2533.0000	2538.5000		
c 2	2538.5000	2544.0000		
c 3	2544.0000	2549.5000		
D1	2549.5000	2555.0000		
D2	2555.0000	2560.5000		
D3	2560.5000	2566.0000		
J	2566.0000	2572.0000		Guard Band
A4	2572.0000	2578.0000	HIGH POWER	Channels can be used for high-power operations like existing ITFS TV.
B4	2578.0000	2584.0000		
C4	2584.0000	2590.0000		
D4	2590.0000	2596.0000		
E4	2596.0000	2602.0000		
F4	2602.0000	2608.0000		
G4	2608.0000	2614.0000		
K	2614.0000	2620.0000		Guard Band
E I	2620.0000	2625.5000	LOW POWER	Channels can be used for TDD or Downstream FDD
E2	2625.5000	2631.0000		
E3	2631.0000	2636.5000		
F1	2636.5000	2642.0000		
F2	2642.0000	2647.5000		
F3	2647.5000	2653.0000		
H1	2653.0000	2658.5000		
H2	2658.5000	2664.0000		
H3	2664.0000	2669.5000		
G1	2669.5000	2675.0000		
G2	2675.0000	2680.5000		
G3	2680.5000	2686.0000		
I	2686.0000	2690.0000		

III. DISCUSSION

A. Broadband Policy Goals and Objectives

32. This proceeding provides us with another opportunity to help meet our statutory duty to "encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans (including, in particular, elementary and secondary schools and classrooms). . ."[87] This proceeding also provides us with the opportunity to further our goal to "establish regulatory policies that promote competition, innovation, and investment in broadband services and facilities while monitoring progress toward the deployment of broadband services in the United States and abroad."" Broadband technologies, which encompass all evolving high-speed digital technologies that provide consumers integrated access to voice, high-speed data, video-ondemand, and interactive delivery services, are a fundamental component of the communications revolution.[89] Fully evolved broadband will virtually eliminate geographic distance as an obstacle to acquiring information and dramatically reduce the time it takes to access information.[90] We intend for this proceeding to accomplish the following objectives:

33. ***Promote availability of broadband to all Americans, including broadband technologies for educators.*** In recent years, the MDS industry has invested several billion dollars to develop broadband fixed wireless data systems in this hand, including high-speed access to the Internet for residential customers, small and medium businesses, and educational institutions." Such systems offer a significant opportunity to provide competition to cable and (Digital Subscriber Line) DSL services in the provision of broadband services in urban and rural areas. In this proceeding we are seeking comment on how best to configure the 2500-2690 MHz band to enable the development of broadband service in the 2500-2690 MHz hand. Broadband technologies hold some promise not only for residential and business communities, but also for American students. The American classrooms are increasingly wired, but access to broadband technologies is still far from ubiquitous. With access to broadband technologies our students and teachers will have more powerful tools with which to learn. ITFS can and should play a role in making broadband more common in our students' educational experience.

34. ***Clarify and stabilize the regulatory treatment of similar spectrum-based services.*** Broadband services should exist in an environment that eliminates regulations that deter investment and innovation and recognizes rules that promote competition and minimize harmful interference.[92] We note that broadband providers are delivering or planning to deliver broadband service over any combination of licensed spectrum, such as 700 MHz, cellular, broadband PCS, Part 101 millimeter wave, MDS/ITFS, and unlicensed spectrum, such as 902-928 MHz, 2.4 GHz, and 5 GHz.[93] As stated above, we seek to stabilize the regulatory regime of the 2500-2690 MHz band by seeking comment on whether

[87] *See* Telecommunications Act of 1996, Pub. L. 104-104, § 706(a), 110 Stat. 56 (1996); 47 U.S.C. § 157.

[88] ***See Spectrum Policy Report.***

[89] ***Id.***

[90] ***Id.***

[91] Coalition Proposal at ii. ***See also, Interim Repon*** at ii

[92] High-speed Access to the Internet Over Cable and Other Facilities, GN Docket No. 00-185, ***Declaratory Ruling and Notice of Proposed Rulemaking,*** 17 FCC Rcd 4798, 4802 ¶ 5 (2002) ***(DeclaratoryRuling).***

[93] License-Exempt Alliance Comments at *3* to ***Spectrum Policy Report.***

consolidating the Services in Part 101 of the Commission's **Rules** to provide regulatory parity for similar wireless services will advance the public interest in more ubiquitous availability of broadband, particularly for educational, telemedicine, and medical purposes.

35. ***Facilitate development of possible alternative broadband residential facilities-based providers.*** In the ***Declaratory Ruling,*** the Commission noted that "[t]hroughout the brief history of the residential broadband business, cable modem service has been the most widely subscribed to technology, with industry analysts estimating that approximately 68% of residential broadband subscribers today use cable modem service . . . 29% of residential broadband subscribers use DSL service, and about 3% of subscribers use various radio-based technologies."[94] **As** we noted above, wireless broadband service in the 2500-2690 MHz band may offer consumers another broadband alternative, which may lead to reduced prices and more competition in the delivery of high-speed internet access.[95] We believe that the changes that we are proposing to make in this proceeding, streamlining the application process, implementing geographic area licensing, modifying technical rules, and proposing **rules** to allow mobile operation in the 2500-2690 MHz band will enable the flexible **use** of the spectrum. These changes will allow for the operation of market forces, which in turn, may stimulate the development of wireless broadband services; thus giving consumers more choice in broadband providers.

B. Spectrum Policy Goals and Objectives

36. Pursuant to the Communications Act, a benchmark **of** national communications policy is to encourage the provision of new technologies and services to the public.[96] Based on the evolution of the Services and recent trends in consumer demand, this proceeding provides **us** with an opportunity to further **our** spectrum management goal to "encourage the highest and best use of spectrum domestically and internationally in order to encourage **the** growth and rapid deployment of innovative and efficient communications technologies and services."[97] The promise of emerging technologies could mean ubiquitous, mobile broadband connections.[98] We believe that it is necessary for **us** to take certain actions, as described in further detail below, to foster the continued development and deployment of the Services by encouraging licensees in the 2500-2690 MHz band to migrate to more technologically and economically efficient uses of the spectrum. We believe that providing these licensees with additional flexibility of use would serve the public interest and allow licensees to provide new and innovative services, consistent with the requirements of Section 303(y) of the Communications Act." Moreover. we believe that **our** proposals address the strong desire for a revamping of the services as expressed by representatives of the **MDS** and **ITFS** communities. In this connection, we intend for this proceeding to accomplish the following spectrum management objectives:

31. Meet Increasing Demand for Spectrum-Based Services. In recent years, we have seen strong demand for mobile telephone and mobile data services. In 2001, the mobile telephony sector generated more than $65 billion in revenues, increased subscribership from 109.5 million to 128.5 million. and

[94] *Declaratory* ***Ruling,*** 17 FCC Rcd at 4803-4804 ¶ 9.

[95] ***See*** para. 33, ***supra.***

[96] See 47 U.S.C. §§ 157(a). ***See also*** 47 U.S.C. 5 309(j)(4)(C)(iii).

[97] Federal Communications Commission, Strategic Plan FY 2003-FY 2008 at 5 **(2002)** (Strategic Plan)

[98] *Id.* at 14.

[99] 47 U.S.C. § 303(y).

produced a nationwide penetration rate of roughly forty-five percent.'" Estimates of the number of mobile Internet users at the end of 2001 ranged from approximately eight to ten million, up from 2 to 2.5 million at the end of 2000.[101] In recent years, the MDS industry has invested several billion dollars to develop broadband fixed wireless data systems in this hand, including high-speed access to the Internet for residential customers, small and medium businesses, and educational institutions.[102] Such systems offer a significant opportunity to provide competition to cable and Digital Subscriber Line (DSL) services in the provision of broadband services in urban and rural areas.

38. We are also cognizant that spectrum-hased services can improve the ability of educators to serve America's students. The Commission is committed to exploring ways in which these hands can he used to advance the public interest in broadband services for all Americans, and therefore reaffirms **our** goal of ensuring that educational and medical institutions continue to have access to spectrum. **In** this proceeding, we hope to grant educators additional rights to make it easier for them to use our national spectrum resource.

39. ***Afford Greater Flexibility to Licensees.*** When we allow increased flexibility in the use of radio spectrum, we allow market forces and educational needs to move spectrum to its highest valued use.[103] In doing so, however, we must carefully calibrate the extent of flexibility that is compatible with avoiding harmful interference. Thus, we endeavor to allow the maximum extent of flexibility possible that would not impair the rights **of** others to offer valued services in the hand.

40. ***Promote Increased Access to Spectrum.*** **Our** rules do not allow profit-making entities to hold ITFS licenses, but they do allow commercial MDS operators to finance, build, operate. and obtain leased use of ITFS transmission facilities – and provide the vast majority of the programming carried over them.[104] We undertake this proceeding to determine whether there are rules that impede the **full** development of the 2500-2690 MHz hand.

41. ***Create regulatory policies that treat similar services similarly.*** In these Services where ITFS and MDS licensees are subject to different regulations, although they offer similar services, we believe that regulatory parity will promote more efficient use of the spectrum allocated for each service Consequently, we propose to consolidate the ITFS rules in Parts 73 and 74 and the MDS rules in Part 21 into **Parts** 27 or 101 to foster consistency among similar wireless services.

42. ***Facilitate grouping similar spectrum uses.*** One of the challenges presented in managing spectrum is to promote incentives for spectrum licensees to he "good neighbors," *i.e.*, not cause harmful interference to adjacent systems. The Commission may accomplish this objective by creating an incentive for spectrum-based systems or devices to migrate to compatible hands based on marketplace forces. We note that the current configuration of the 2500-2690 MHz band in which high-power ITFS channels are interleaved with MDS channels, may inhibit the development of low power cellularized

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[100] Federal Communications Commission, ***Seventh Annual CMRS Competition Report*** (FCC 02-179, rel. July 3, 2002) at ***5***.

[101] ***Id***

[102] Coalition Proposal at 4 ***See also, 3G Final Report*** at 13.

[103] **See** FCC Staff Report, ***Spectrum Policy Task Force Report in ET Docket No. 02-135***, released Nov. 2002 ***(SpectrumPolicy Report).***

[104] 47 C.F.R. § 74.931

broadband uses of the MDS channels. Thus, in this proceeding we are seeking comment on reconfiguring the 2500-2690 MHz band to separate low power uses from high power **uses** and thereby promote the most efficient **use of** the 2500-2690 MHz band.

43. ***Conduct effective and timely licensing activities that encourage efficient use of the spectrum.*** To ensure that licensing of the 2500-2690 MHz band occurs in a rapid, routine, and ordinary manner, we propose to greatly streamline the application process for the Services, including migrating licensees to the ULS. **Also,** we are proposing other licensing approaches, such as licensing by geographic area, that will give licensees increased flexibility while greatly reducing the administrative burdens on both licensees and the Commission.

C. Problems with the Existing MDS/ITFS Rules

44. The Coalition has identified some of the problems with the existing MDS and ITFS rules. The Coalition Plan focuses primarily on engineering issues – accommodating the needs of two incompatible types of users that presently share a single band: one-way, relatively high-powered stations and operators that seek to maximize spectral efficiency by deploying low-powered cellular systems. The Coalition also identifies certain areas where the Commission could act to reduce administrative burdens on licensees and make the MDS/ITFS licensing process more efficient. In addition, the Coalition proposes ways to eliminate unnecessary paperwork requirements that would otherwise impose a near-impossible burden on low-power operators.

45. Both the Coalition's perception **of** the problem and its proposed solutions are broadly consistent with the conclusions reached in a **major** report **our** staff completed in 2001, the ***3G Final Report.'"*** The most important conclusion reached in the ***3G Final Report*** is that traditional MDS/ITFS stations and third generation cellular systems are not compatible with each other when they are operating on the same frequencies. Their service area borders must be separated by distances exceeding 100 miles to ensure that MDS/ITFS transmitters will not cause harmful interference to Third Generation (3G) receivers.[106] Moreover, the report concludes that existing MDS/ITFS system preclude operation of 3G systems in forty-nine of the fifty largest cities in the U.S., because all thirty-one of the MDS and ITFS channels in the 2500-2690 MHz band are licensed within 100 miles of those forty-nine cities.'" The authors of the ***3G Final Report*** recognize that it would be infeasible to move the incumbent licensees to a different band. Instead, they recommend segmenting the band into separate high- and low-power segments **and** requiring both incumbents and new applicants to conform with the new technical rules.[108] While the ***3G Final Report*** focuses on one particular type of new technology, its conclusions may apply with respect to any low-powered two-way service that seeks to achieve spectral efficiencies through a cellular-style configuration.

46. **As** discussed below, we believe that the Coalition's proposals are a major step forward as we examine this band. However, we believe that significant progress will also require a discussion of ownership and eligibility issues, transition timetables, and, perhaps, a more thorough resolution of engineering issues as well. Specifically, we seek comment on the possibility of expanding the ITFS

[105] The definition **of** "3G" is discussed at note 47, supra.

[106] ***Id.*** at **3**1.

[107] *Id.* at **32.**

[108] *Id.* at 40-41.

eligibility criteria to include commercial entities, and we address the possibility of merging MDS and ITFS into a single Broadband Communications Service. We also seek comment on establishing specific deadlines for completion of the transition process, and we inquire whether we should establish a timetable for conversion of the entire 2500-2690 MHz band to low-power operations compatible with two-way, broadband cellular services. We do not propose to reclaim licenses from any incumbent operators that have complied with our existing rules and continue to comply with our rules when we change them or adopt new ones.

D. Changes to 2500-2690 MHz Band Plan

1. Background

47. ITFS and all but two of the MDS channels are located in the 2500 – 2690 MHz band. As shown in the chart below, ITFS currently has twenty 6-MHz channels, while MDS has eleven 6-MHz channels in the 2500 – 2690 MHz band. The channels are usually licensed in groups of four, but the channels in each group are not contiguous. The chart below depicts the arrangement. This band plan was designed primarily to promote wireless cable and educational television services. When ITFS was created, ITFS reception equipment could not receive adjacent channels without interference.[109] Thus, the Commission interleaved the A block channels with the B block channels, the C block channels with the D block channels, the E block channels with the F block channels and the G block channels with the H block channels.

Existing MDS/ITFS Band Plan

Existing Channel Designation	Lower Frequency	Upper Frequency	
A1	2500.0000	2506.0000	
B1	2506.0000	2512.0000	
A2	2512.0000	2518.0000	
B2	2518.0000	2524.0000	
A3	2524.0000	2530.0000	
B3	2530.0000	2536.0000	
A4	2536.0000	2542.0000	
B4	2542.0000	2548.0000	ITFS
C1	2548.0000	2554.0000	
D1	2554.0000	2560.0000	
C2	2560.0000	2566.0000	
D2	2566.0000	2572.0000	
C3	2572.0000	2578.0000	
D3	2578.0000	2584.0000	
C4	2584.0000	2590.0000	
D4	2590.0000	2596.0000	
E1	2596.0000	2602.0000	
F1	2602.0000	2608.0000	
E2	2608.0000	2614.0000	
F2	2614.0000	2620.0000	
E3	2620.0000	2626.0000	MDS
F3	2626.0000	2632.0000	
E4	2632.0000	2638.0000	
F4	2638.0000	2644.0000	
G1	2644.0000	2650.0000	
H1	2650.0000	2656.0000	
G2	2656.0000	2662.0000	ITFS
H2	2662.0000	2668.0000	MDS
G3	2668.0000	2674.0000	ITFS
H3	2674.0000	2680.0000	MDS
G4	2680.0000	2686.0000	ITFS
I1-I31	2686.0000	2689.8750	MDS/ITFS OFS

48. This channelization framework was appropriate for first generation technology when the Commission created ITFS and MDS, but is not optimal for digital two-way services. The Coalition notes that the existing band plan – which provides licensees with multiple interleaved 6 MHz channels rather than contiguous spectrum – was established in the early 1960s when television technology precluded the use of adjacent channels, and has remained essentially unchanged since that time.[110] The Coalition asserts that

[109] Coalition Proposal at 1.

[110] *Id.*, *citing* Amendment of Parts 2 and 74 of the Commission's Rules and Regulations to Establish a New Class of Educational Television Station of the Transmission of Instructional and Cultural Material to Multiple Receiving Locations on Channels in the 1990-2110 Mc/S or 2500-2690 Mc/S Frequency Band, FCC 63-722 (rel. July 30, 1963), *on recon.* 2 Rad. Reg.2d 1619 (P&F 1964); Amendment of Sec. 74.902 of the Rules Governing Instructional Television Fixed Stations to Assign Alternate Channels to Stations Operating in the Same Area Instead of Every Sixth Channel, 2 Rad. Reg.2d 1615 (P&F 1964).

Lower Band (LBS)	J Band	Middle Band (MBS)	K Band	Upper Band (UBS)	I Band

51. The Coalition proposes that the LBS be designated as the mobile station transmit band and that the UBS be designated as the base station transmit band. Such a designation would protect the

[111] *Coalition* Proposal at **9.**

[112] ***Id.***

[113] ***Id.*** at 10.

[114] The service provider would not necessarily know, and might not need to know, whether a new subscriber was seeking to obtain mobile or fixed two-way data service. **A** laptop computer might be fixed part of the time and mobile **at** other times.

passive band at 2690-2700 MHz band. We seek comment on this alternative.[115]

52. The *3G Final Report* discusses two other types of band segmentation plans.[116] Under the first type of band plan, there would be alternating bands for low power services and high power services, respectively, with guard bands in between the two 45 megahertz frequency blocks for low power services. The chart below is a pictorial representation of such a band plan:

Low Power Operations	Guard Band	High Power Operations	Guard Band	Low Power Operations	Guard Band	High Power Operations

A benefit of this option is that it would allow both types of operations to provide frequency separation between paired channel blocks for both *3G* and ITFS/MDS operations for frequency division duplex (FDD) technology. Just as important, the ability to implement time division duplex (TDD) systems is not precluded by this segmentation plan. An operator may implement TDD technology on any spectrum block for which it is licensed.

53. Another option would be to separate the band into one block for low power operations and one block for high power operations, separated by a guard band. Such a band plan would look like this:

Low Power Operations	Guard Band	High Power Operations

Such a band plan would provide a large block of contiguous spectrum for both types of operations. As noted in the *3G Final Report,* such a band plan would be particularly well suited to TDD technology.[117]

54. We seek comment on various band plans or other plans that would separate the band into high power and low power operations. Commenters should address such issues as (1) the appropriate channelization plan, (2) the justification for and appropriate size of any guard bands, and what types operations could be permitted in such bands, (3) whether tighter out-of-band emission limitations could serve as an alternative to guard bands; (4) whether, and under what circumstances, licensees may disaggregate or aggregate channels, (5) any special rules to apply in a particular band segment or channel, (6) whether every market requires a uniform band plan, or whether different band plans would be appropriate for different markets, and (7) whether any plan is inconsistent with the educational mission of ITFS or fails to recognize the unusual challenges faced by nonprofit educational institutions. With regard to the latter concern, we note that our *Spectrum Policy Report* raises the possibility of allowing licensees in uncongested rural areas to operate at higher power levels, provided they do not thereby generate unacceptable interference in urban areas.[118]

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[115] We also seek comment on amending the Table of Allocations to adopt a US footnote listing the radio observatories that use 2655-2690 MHz on a secondary basis and 2690-2700 MHz on a primary basis.

[116] *3G Final Report at 37-57.*

[117] *Id.* at 42.

[118] *Spectrum Policy Report* at 58-60.

55. The other basic approach would be to avoid any segmentation of the band by applying an across-the-hoard limit on signal strengths sufficient to accommodate low power cellularized operations on all channels throughout the 2500-2690 MHz band. The Coalition Plan, or any other band segmentation plan, would require extensive, mandatory re-shuffling of channel assignments to avoid leaving high power channels adjacent to low power channels, to avoid adjacent channel interference.[119] By contrast, applying an across-the-board limitation on signal strengths could make de-interleaving a less urgent necessity and, perhaps, make it possible for acquisitions, channel trades, and other voluntary market processes to effectuate any needed consolidation of channels. We seek comment on the extent tu which such a rule would reduce the need to apply mandatory channel reassignments or whether it would interfere with future uses of this spectrum by educators.

56. If we were to adopt an across-the-board reduction in signal strengths, we anticipate that we would adopt a transition period during which existing high power operations could continue to operate. At the end of the transition period, absent an agreement with affected licensees, we would require high power licensees to comply with new interference protection criteria. Alternative mechanisms for encouraging or requiring transitions to a new band plan are discussed in section III(D)(5), below. To the extent that parties file comments on these issues, we ask them to discuss the differing considerations that might apply depending upon whether we adopt a high-power/low-power band segmentation plan or an across-the-board reduction in power levels that would not require segmentation of the band.

57. From a broader perspective, we note that Coalition members appear to believe that the predominant future use of this band will be low power mobile services. On that basis, we seek comment on whether it will be necessary to reserve a portion of this band in the long term to accommodate high power services. We particularly seek comment from licensees who are currently engaging in high power operations as to their plans for the spectrum. We seek comment on the technical feasibility and cost involved in complying with technical rules that may require licensees to lower substantially their signal strength outside their protected service areas. Based upon all of those considerations, we inquire whether a uniform reduction in power levels throughout the 2500-2690 MHz band would be warranted. We inquire to what extent such a plan would disrupt existing high-powered operations, and to what extent it would produce offsetting advantages by making more channels available for low-power operations.

3. Response Channels

58. In 1991, we allocated the seven 125 kHz response channels (part of the R channels under the Coalition band plan) associated with MDS Channels E3, E4, F3, F4, H1, H2, and H3 to the POFS.[120] The Coalition proposes to return these channels for MDS use.[121] We believe the proposal has merit because, as the Coalition notes, there are no OFS licensees currently on these channels, probably because they are too narrow to be usable by themselves. We ask for comment on this proposal. We also seek comment on how to assign this spectrum, if reallocated. For example, should we automatically give the channels to the geographic area licensee of the corresponding 6-megahertz main channel? The Coalition favors this approach. Another option would be to license the channels on a geographic area basis and allow any eligible entity to apply for these channels. If we received mutually exclusive applications, we would hold

[119] We address the complex transitional issues implicated by that process in section III.D.6.

[120] *MDS Second R&O*, 6 FCC Rcd at 6795.

[121] Coalition Proposal at 12, n.30

an auction."'

59. The Coalition recommends that operation on the response (R) channels be secondary to operation on the LBS, MBS, and UBS channels. In other words, they would have us provide that operation on the response channels must not cause harmful interference to operations on the LBS, MBS, and UBS channels and the R channel licensee must accept any interference caused by an LBS, MBS, or UBS licensee operating in accordance with our Rules. The MMDS Licensee Coalition opposes this recommendation and states that response channels should receive equal status.[123] We seek comment on this issue.

4. Utilization of Unassigned ITFS Spectrum

60. Under our rules, MDS and ITFS licensees and applicants must apply to license each transmitter site in the area they wish to serve (*i.e.*, site-based licensing).'" In addition, we license MDS BTA channels on a geographic area basis.[125] The Coalition argues that elimination of site-by-site licensing and adoption of a geographic area-licensing concept for low-power operations will promote deployment of advanced low-power systems because a site-by-site licensing system is cumbersome and the transaction costs are too high to permit competitive businesses to flourish using next generation technology.[126] The Coalition contends, however, that a site-by-site licensing approach will continue to be necessary for high-powered, one-way operations, though they state that such operations could benefit from a streamlined site-by-site licensing approach."'

61. In general, there are two types of flexible, market-oriented approaches to spectrum allocation – the "exclusive use" model, and the "commons" model.[128] Under the "exclusive use" model, "a licensee has exclusive and transferable rights to the use of specified spectrum within a defined geographic area, with flexible use rights that are governed primarily by technical rules to protect spectrum users against interference."[129] Under the commons model, spectrum is available to all users that comply with established technical "etiquettes" or standards that set power limits and other criteria for potential operation of unlicensed devices to mitigate potential interference.[130] These models suggest two types of approaches for allowing use of the unassigned ITFS spectrum – geographic area licensing and unlicensed operation pursuant to Part 15 of the Commission's Rules on a primary basis. We seek comment on whether one or the other of these models is the best means of ensuring the maximum and efficient use of the ITFS spectrum.

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[122] *See* para. 22, *supra.*

[123] MMDS Licensee Coalition Comments at 8

[124] *See* 47 C.F.R. §§ 74.910, 74. 911

[125] *See MDS Auction Report and Order,* 10 FCC Rcd 9607

[126] *See* Coalition Proposal at 19

[127] *Id.*

[128] *Spectrum Policy Report* at *35.*

[129] *Id.*

[130] *Id.*

a. Geographic Area Licensing of Unassigned ITFS Spectrum

62. One means of seeking to increase the intensity and efficiency of use of the ITFS spectrum would be to license the unassigned **ITFS** spectrum using geographic area licensing. In other bands where we contemplated allowing the development of mobile or other wide-area services, we concluded that licensing based on pre-defined service areas (*e.g.*, geographic area licensing) poses significant advantages over site-based licensing because of the greater operational flexibility it gives licensees and the greater ease of administration for consumers, licensees, and regulators.[131] For example, geographic area licensing reduces administrative burdens and operating costs by allowing licensees to modify, move, and add to their facilities within specified geographic areas without prior Commission approval.[132] Our experience has been that wide-area licensing (as opposed to site-by-site licensing) affords licensees substantial flexibility to respond to market demand and may result in significant improvements in spectrum utilization."' In particular, geographic area licensing allows licensees to coordinate usage across an entire geographic area to maximize the use of spectrum in areas of highest demand. Geographic area licenses also provide licensees the flexibility to adjust spectrum usage depending upon market demands. Such adjustments may be significantly more difficult under a site-by-site licensing regime where prior Commission approval is needed before a licensee can address growth or changes in demand.

63. The facts that both **ITFS** and MDS channels in the same communications system and that many MDS licensees already have geographic area licenses may provide an additional reason for providing ITFS operators with geographic area licenses as well. We seek comment on whether both the public and the Commission would benefit from a consistent licensing approach across the entire band. We note that this licensing approach is consistent with the operational flexibility we have afforded other entities that use spectrum to provide services such as **24** GHz, 39 GHz, **PCS,** 700 MHz commercial band

[131] Implementation of Sections 309(j) and 337 of the Communications Act: Promotion of Spectrum Efficient Technologies on Certain Part 90 Frequencies and Establishment of Public Service Radio Pool in the Private Mobile Frequencies Below 800 MHz, ***Notice of Proposed Rulemaking,*** 14 FCC Rcd 5206, 5238 ¶ 63 (1999); Amendment of Parts 2, 15, and 97 of the Commission's Rules to Permit Use of Radio Frequencies Above 40 GHz for New Radio Applications, ***Second Report and Order,*** 12 FCC Rcd 10,571, 10,599 ¶ 63 (1997); Revised Competitive Bidding Authority to Implement Sections 309(j) and 337 of the Communications Act of 1934, as Amended by the Balanced Budget Act of 1997, 64 Fed. Reg. 23571-01 (1999).

[132] ***See*** Implementation of Sections 3(n) and 332 of the Communications Act and Amendment of Part 90 of the Commission's Rules to Facilitate Future Development of SMR Systems in the 800 MHz Frequency Band, ***Third Report and Order,*** PR Docket **Nos.** 89-553, 93-144, GN Docket No. 93-252, 9 FCC Rcd 7988, 8044. ***See also,*** Amendment of the Commission's Rules Regarding Multiple Address Systems, WT Docket No. 97-81, ***Report and Order,*** 15 FCC Rcd 11956 (2000). ***See also,*** Reallocation and Service Rules for the 698-746 MHz Spectrum Band (Television Channels 52-59), ***Report and Order,*** 17 FCC Rcd 1,022 (2002) ***(Lower 700 MHz Band R&O).***

[133] ***See. e.g.,*** Amendment of Part 90 of the Commission'sRules to Facilitate Future Development of SMR Systems in the 800 MHz Frequency Band, PR Docket No. 93-144, ***First Report and Order, Eighth Report and Order, and Second Further Notice of Proposed Rule Making,*** 11 FCC Rcd 1463 (1995) (restructuring licensing framework for 800 MHz Specialized Mobile Radio Service and adopting wide-area licensing). ***See also*** Gregory L. Rosston & Jeffrey S. Steinberg, ***Using Market-Based Spectrum Policy to Promote the Public Interest,*** 50 Fed. Comm. L.J. 87, 94 (1997).

and SMR licensees.[134]

64. We also seek comment on the possible disadvantages of licensing unassigned ITFS spectrum on a geographic area basis. Would geographic area licensing make it more difficult for educational institutions and nonprofit educational organizations to obtain access to spectrum? Would licensing ITFS spectrum on a geographic area basis result in the underutilization of spectrum because ITFS users are interested in operating in small, discrete areas?

65. If we decide to license unassigned ITFS spectrum via a geographic area overlay license, we must address three issues: what geographic areas to use for licenses, how much bandwidth should be associated with each license, and how to address interference issues near international borders. We address each of these issues below.

(i) Geographic Areas for Licenses

66. Assuming that we use a GSA approach to license this band, we must determine the appropriate size(s) of service areas on which licenses should be based. Traditionally, in establishing a service the Commission attempts to adopt optimal spectrum block size(s) and optimal GSAs. while at the same time allowing parties to aggregate initial licenses and then adjust their licenses through secondary market mechanisms such as partitioning and disaggregation, if such fine-tuning is necessary.

67. Ideally, the size(s) of the initial GSAs would match the business plans of the initial licensees. Our approach to determining optimum size(s) attempts to accommodate the likely range of applicant desires by balancing efficiency with the policy goal of disseminating licenses among a wide variety of applicants.[135] We also wish to foster service to rural areas[136] and tribal lands, and to promote investment in and rapid deployment of new technologies and services.[137] Large license areas may be preferred by incumbent providers to facilitate build-out of existing large-area systems. Large license areas also provide carriers with greater flexibility in the build-out of their services, since they are less constrained by geographical license limits and entail coordination with fewer adjacent service providers. In this regard, we seek comment on whether any problems associated with the operations of other service providers may be better addressed by licensing this spectrum in larger areas where there may be less of a need for complicated protection agreements. On the other hand, small license areas may favor smaller entities with regional business plans and no interest in providing large-area service. Rural and smaller carriers may prefer licensing based on small geographic areas.[138]

68. We note that our simultaneous multiple round and combinatorial (or "package") auction designs generally may offer bidders the opportunity to aggregate smaller regional licenses to cover larger

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[134] See Part 20 (Commercial Mobile Radio Services), Part 22 (Public Mobile Services), Part 24 (Personal Communications Services), Part 26 (General Wireless Communications Service), Part 27 (Miscellaneous Wireless Communications Services), and Part 90 (Private Land Mobile Radio Services) of our rules.

[135] *See* 47 U.S.C. § 309(j)(3)(B), (4)(C).

[136] See 47 U.S.C. § 309(j)(3)(A)

[137] *See* 47 U.S.C. § 309(j)(4)(C)(iii).

[138] *See, e.g.*, Service Rules for the 746-764 and 776-794 MHz Bands. and Revisions to Part 27 of the Commission's Rules, WT Docket No. 99-168, *First Report and Order*, 15 FCC Rcd 476,499 ¶ 55 (2000) *(Upper 700 MHz First Report and Order).*

geographic areas, to aggregate smaller spectrum blocks, and to pair unpaired spectrum.[139] Such aggregation at auction of smaller spectrum blocks and licenses may provide bidders with greater flexibility to implement their business plans, as compared with the traditional approach of defining optimal size. Thus, in discussing the issues of spectrum block size, geographic area, and pairing of spectrum, commenters are requested to take into consideration the various available auction designs. For example, if a commenter advocates a nationwide geographic area license, the commenter may also wish to comment on whether the auction of smaller licenses would allow bidders to aggregate licenses to create a nationwide footprint. Commenters should also discuss whether a particular band plan serves the Commission's spectrum management goals, including flexible and efficient spectrum use.[140] We are also aware that some licensees may need smaller service areas, since the most desirable or efficient scale of service area may vary according to the business plan of the potential licensee, in light of the variety of potential services that we envision will use these bands, including emerging technologies or next-generation applications. Thus, in discussing these issues, commenters should also take into consideration the possibility that we would permit post-auction partitioning of licenses for bidders whose business plans require different size geographic areas than we ultimately adopt.

69. In the past the Commission has licensed spectrum using a wide variety of **GSAs,** including nationwide licensing, regional licensing, local licensing, or some combination of these approaches:

[139] Package bidding may take many forms. Under the design that the Wireless Telecommunications Bureau developed for the 700 MHz band auction (Auction No. 31), bidders were not restricted to placing bids on individual licenses, but were allowed to place all-or-nothing bids on packages **of** licenses. Auction of Licenses in the 747-762 and 777-792 MHz Bands Scheduled for September 6, 2000; Procedures Implementing Package Bidding For Auction No. 31, *Public Notice*, 15 **FCC** Rcd 11,526 (2000) (describing package bidding procedures); ***see* also** Auction of Licenses on the 747-762 and 777-792 MHz Bands Scheduled for June 19, 2002, Round Results Process and Results Replication, *Public Notice,* 17 **FCC** Rcd 8.128 (2002). Under this approach, for example, a bidder desiring to inaugurate a nationwide service could bid on a package of licenses that covers the entire nation, and not face the risk of winning only some of the desired licenses and paying more than the bidder values those licenses by themselves (without the other licenses needed to provide nationwide coverage).

[140] *See* 47 **U.S.C.§** 309(j)(3)(D).